

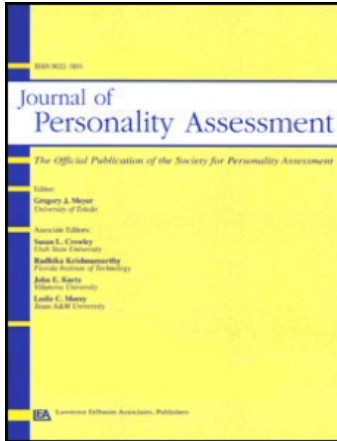
This article was downloaded by: [University of Kentucky]

On: 18 May 2010

Access details: Access Details: [subscription number 917349989]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Personality Assessment

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t775653663>

A Comparison of Obsessive-Compulsive Personality Disorder Scales

Douglas B. Samuel^a; Thomas A. Widiger^b

^a Department of Psychology, University of Kentucky, Lexington ^b Department of Psychiatry, Yale University School of Medicine,

Online publication date: 19 April 2010

To cite this Article Samuel, Douglas B. and Widiger, Thomas A. (2010) 'A Comparison of Obsessive-Compulsive Personality Disorder Scales', *Journal of Personality Assessment*, 92: 3, 232 – 240

To link to this Article: DOI: 10.1080/00223891003670182

URL: <http://dx.doi.org/10.1080/00223891003670182>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

A Comparison of Obsessive–Compulsive Personality Disorder Scales

DOUGLAS B. SAMUEL¹ AND THOMAS A. WIDIGER²

¹Department of Psychology, University of Kentucky, Lexington

²Department of Psychiatry, Yale University School of Medicine

In this study, we utilized a large undergraduate sample ($N = 536$), oversampled for the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision [DSM-IV-TR]; American Psychiatric Association, 2000) obsessive–compulsive personality disorder (OCPD) pathology, to compare 8 self-report measures of OCPD. No prior study has compared more than 3 measures, and the results indicate that the scales had only moderate convergent validity. We also went beyond the existing literature to compare these scales to 2 external reference points: their relationships with a well-established measure of the five-factor model of personality (FFM) and clinicians' ratings of their coverage of the DSM-IV-TR criterion set. When the FFM was used as a point of comparison, the results suggest important differences among the measures with respect to their divergent representation of conscientiousness, neuroticism, and agreeableness. Additionally, an analysis of the construct coverage indicated that the measures also varied in terms of their representation of particular diagnostic criteria. For example, whereas some scales contained items distributed across the diagnostic criteria, others were concentrated more heavily on particular features of the DSM-IV-TR disorder.

The American Psychiatric Association (2000) defined obsessive–compulsive personality disorder (OCPD) as “a pervasive pattern of preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency” (p. 725). Torgersen's (2005) review of eight epidemiological studies found (perhaps surprisingly) that OCPD had the highest median prevalence rate of all the personality disorders (PDs), occurring in nearly 2% of the adult population. Subsequently, the National Epidemiological Survey on Alcohol and Related Conditions (Grant et al., 2004), which represents the largest national sample collected to date, indicated that OCPD is the most prevalent PD within the general population, occurring at a rate of 7.9%.

This personality disorder has been included in all previous editions of the *Diagnostic and Statistical Manual of Mental Disorders* and traces its origins to Freud's (1908/1953) description of the “anal” character traits of orderliness, parsimony, and obstinacy (Pfohl & Blum, 1995). Despite this long history, the construct described in DSM-IV-TR (American Psychiatric Association, 2000), has traveled a winding road that has seen substantial changes to what are considered its essential features (see Costa, Samuels, Bagby, Daffin, and Norton, 2005, for a more complete historical review). For example, the DSM-I (American Psychiatric Association, 1952) description of what was termed *compulsive personality* featured overconcern “with adherence to standards of conscience or of conformity,” overinhibition, overconscientiousness, “an inordinate capacity for work,” rigidity, chronic tension, and a “lack [of] a normal capacity for relaxation” (p. 37). There was little change from the first to the second edition of the diagnostic manual, but a substantial shift in the

third (Costa et al., 2005; Pfohl & Blum, 1995). Notably, the DSM-III (American Psychiatric Association, 1980) criteria did not include overconcern with morality, overconscientiousness, difficulty relaxing, or chronic tension. The DSM-III did retain the elements of perfectionism and workaholicism but shifted the essential feature to include a “restricted ability to express warm and tender emotions” (American Psychiatric Association, 1980, p. 326). The diagnostic criteria underwent another substantial revision for the DSM-III-R (American Psychiatric Association, 1987), as four additional criteria were added “to better represent the original psychoanalytic constructs of parsimony and orderliness as well as obstinacy” (Widiger, Frances, Spitzer, & Williams, 1988, p. 791). As such, an essential feature became “a pervasive pattern of perfectionism and inflexibility” (American Psychiatric Association, 1987, p. 354). However, the OCPD diagnosis was altered again with the publication of the DSM-IV (American Psychiatric Association, 1994) such that the restricted expression of affection that had been a defining feature within the DSM-III was removed entirely from the diagnostic criterion set (along with indecisiveness; Pfohl & Blum, 1995).

In short, the history of OCPD is characterized by significant alterations to its core features, additions, and subtractions to its criterion sets and indecisive shifts in its title (Costa et al., 2005; Pfohl & Blum, 1995). It might not be surprising, then, if extant measures have conceptualized and assessed OCPD in very different manners. Indeed, there are now a number of different self-report measures that include an OCPD scale (McDermutt & Zimmerman, 2005), and they have obtained questionable convergent validity (Widiger & Boyd, 2009).

Widiger and Boyd (2009) compiled a list of 24 studies that have reported convergent correlations between at least two self-report OCPD inventories. The 38 correlations reported within these studies ranged from a low of $-.50$ (Zarrella, Schuerger, & Ritz, 1990) to a high of $.70$ (Hicklin & Widiger, 2000). The median convergent value across the studies was $-.07$, a value that was by far the lowest among the 10 PDs. In fact, the next lowest median value was for narcissistic PD, which obtained a

Received December 12, 2008; Revised December 10, 2009.

Douglas B. Samuel is now at VA Connecticut Healthcare, West Haven, Connecticut, by appointment from Yale School of Medicine.

Address correspondence to Douglas B. Samuel, VA Connecticut Healthcare, 950 Campbell Avenue 151-D, Building 35, West Haven, CT 06516; Email: douglas.samuel@yale.edu

median convergent value of .55. Clearly, this finding indicates that the existing measures are assessing OCPD in quite different ways.

A good number of studies have assessed the convergent validity of measures of OCPD, although they are typically confined to a comparison of just two instruments (Widiger & Boyd, 2009). None has considered more than three instruments at any one time, and none has compared multiple self-report inventories with respect to an external indicator. One potentially useful reference point by which to compare these alternative assessments of OCPD might be the five-factor model (FFM). The FFM was developed to provide a reasonably comprehensive description of general personality structure, consisting of the five broad bipolar domains of extraversion (vs. introversion), agreeableness (vs. antagonism), conscientiousness (vs. impulsivity), neuroticism (vs. emotional stability), and openness (vs. closedness to experience). The FFM has been recommended as a basis for comparing and integrating seemingly diverse personality constructs (Ozer & Reise, 1994). Goldberg (1993) even analogized the domains of the FFM to the coordinates of latitude and longitude used to map the world.

A number of studies have employed the FFM as a metric with which to compare PD assessment instruments (e.g., Trobst, Ayearst, & Salekin, 2004). For example, Zuroff (1994) compared two alternative measures of dependency with respect to their relationship to the NEO Personality Inventory (NEO PI; Costa & McCrae, 1985). Costa and McCrae (1990) also used the NEO PI as a point of comparison for different versions of the Millon Clinical Multiaxial Inventory (MCMI; Millon, Millon & Davis, 1997). Hicklin and Widiger (2005) compared alternative measures of psychopathy and antisocial PD with respect to the FFM. Additionally, Miller and Campbell (2008) as well as Samuel and Widiger (2008) have recently administered the Revised NEO PI (NEO PI-R; Costa & McCrae, 1992), along with several existing measures of narcissism and found that differences among these scales were readily understood with respect to their differential relationship with FFM concepts.

An additional method of understanding the differences among measures is to investigate how well they cover the OCPD construct as rated by clinicians. This type of analysis would indicate whether the items contained within each instrument differ in terms of their representation of the individual diagnostic criteria for OCPD. Thus, in this study, we proposed to compare eight scales assessing OCPD with respect to their relationship with FFM personality traits as well as their coverage of the diagnostic criteria included within the *DSM-IV-TR* (American Psychiatric Association, 2000). The OCPD self-report inventory scales we included in this study were those most commonly used in prior research (Widiger & Boyd, 2009). It is particularly useful to make these comparisons within the same sample to provide the most direct, comprehensive, and unobstructed comparison of the respective measures. It should be noted that in this comparison, we did not necessarily seek to identify the most valid measure but to ascertain meaningful differences in the traits and features emphasized by and/or excluded from the various instruments.

METHOD

The study was approved by the appropriate institutional review board, and the sample was drawn from the introductory psychology student participant pool at the University of Kentucky. To maximize the presence of *DSM-IV-TR* OCPD symp-

tomatology, we included the OCPD scale from the Personality Diagnostic Questionnaire-4 (PDQ-4; Hyler, 1994) in a packet of prescreening measures that were administered to over 1,000 potential participants. We chose the PDQ-4 for this purpose because it is a commonly used PD measure (Widiger & Boyd, 2009), and its brevity allows for easy implementation as a screening measure. Individuals who endorsed at least five of the eight PDQ-4 items were formally invited (via e-mail) to participate in this study. After 150 from this group had participated to ensure the oversampling for OCPD pathology, we opened the study to the entire subject pool to expand the range. We conducted the study using an online survey tool (i.e., MRInterview [SPSS inc., 2006]). The scales were administered in the order they appear in the Materials section following. Participation took approximately 90 to 120 min, and we invited participants at several intervals to take brief breaks if necessary. In total, 559 participants provided informed consent and completed selected scales from personality and PD instruments over the course of approximately 2 hr. Of the total sample, 23 (4%) of the participants provided incomplete protocols, and we dropped them from the study, yielding a final sample of 536 participants, 155 (29%) of whom had been prescreened for elevated OCPD symptomatology.

Materials

NEO PI-R. The NEO PI-R (Costa & McCrae, 1992) is a measure of the Five-factor model of personality and contains 240 items that are rated on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This instrument is composed of five broad domain scales, which are each, in turn, assessed by six underlying facet scales. In this sample, domain scales had alphas that ranged from .86 to .91, with a median value of .90. At the facet level, the alphas ranged from a low of .50 to a high of .81, with a median value of .74.

MCMI-III. The MCMI-III (Millon et al., 1997) is a 175-item, true-false, self-report inventory developed in accordance with the *DSM-IV*, which assesses 14 PDs as well as 10 other clinical syndromes. The MCMI-III is among the most frequently used self-report inventories in clinical practice (Camara, Nathan, & Puente, 2000), and we administered its 17-item OCPD scale in this study.

Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The MMPI-2 is a 567-item, true-false, self-report inventory that provides scores on 10 Clinical scales as well as supplemental scales. Morey, Waugh, and Blashfield (1985) selected those items from the inventory that appeared to represent *DSM-III* (American Psychiatric Association, 1980) OCPD and demonstrated good internal consistency. The resulting scale contained 13 items. Somwaru and Ben-Porath (1995) subsequently created their own OCPD scale from the MMPI-2 to identify *DSM-IV* OCPD, utilizing 10 of the items from Morey et al. as well as including 10 additional items. We included both scales in this study.

OMNI Personality Inventory. The OMNI (Loranger, 2001) consists of 375 items designed to assess both normal and abnormal personality traits including 10 trait scales corresponding to the *DSM-IV* PDs. Items are scored on a scale ranging from

1 (*definitely agree*) to 7 (*definitely disagree*). We administered the OCPD scale containing 18 items in this study.

Wisconsin Personality Inventory–IV (WISPI–IV; Klein & Benjamin, 1996). The WISPI–IV consists of 204 items that are scored along a scale that ranges from 1 (*not at all, never applies to me*) to 10 (*extremely, always applies to me*). We administered the WISPI–IV OCPD scale containing 18 items in this study.

Structured Clinical Interview for DSM–IV Axis–II Personality Questionnaire (SCID–II–PQ; First, Gibbon, Spitzer, Williams, & Benjamin, 1997). The SCID–II–PQ is a self-report screening instrument for the SCID–II clinical interview, which assesses each of the *DSM–IV* PDs. It contains a total of 117 items that are answered as either true or false. We administered the nine items corresponding to the diagnostic criteria for OCPD.

Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993). The SNAP is a 375-item true–false instrument that assesses a dimensional model of personality disorder containing three temperament and 12 primary trait scales as well as the *DSM–III–R* (American Psychiatric Association, 1987) PDs. We administered the OCPD scale containing 23 items in this study.

PDQ–4. The PDQ–4 (Hyler, 1994) is a 99-item, true–false, self-report inventory that assesses 12 PDs according to the *DSM–IV*. The PDQ–4 is commonly used within clinical research (Bagby & Farvolden, 2004; Widiger & Boyd, 2009), and its OCPD scale has eight items corresponding to each diagnostic criterion for the disorder. We administered the entire PDQ–4 in this study.

Construct Coverage Ratings

We asked six clinicians within the Lexington, Kentucky, community and familiar with the OCPD construct to rate how well the individual items from the OCPD instruments assessed each of the eight *DSM–IV–TR* diagnostic criteria. We provided them with a list of all of the OCPD items from all eight instruments asked them to code each item with respect to all eight diagnostic criteria. These ratings were provided on a 0 to 4 Likert-type scale in which 0 = *not representative of the given criteria*, 1

= *slightly representative*, 2 = *moderately representative*, 3 = *mostly representative*, and 4 = *fully representative* of the given criteria. We compensated the clinicians \$25 for their time and effort.

RESULTS

Consistent with the student population as a whole, the sample was largely female (62.7%) and predominantly White (91.0%). Of the sample, 4% was African American, 1.7% Asian American, and an additional 3.2% described themselves as “multiracial” or “other”; 2% of the sample listed their ethnicity as Latino/Latina. The sample consisted primarily of 1st-year students (68.4%) in their first semester of college but also included 23.2% 2nd-year students, 6.0% 3rd-year students, and 1.3% 4th-year students. The participants ranged in age from 18 to 27 years, with a mean of 18.8. Of the participants, 213 (40.9%) reached the diagnostic threshold for OCPD on the PDQ–4, and 50.4% met criteria using the SCID–II–PQ. Given the tendency of these screening instruments to diagnose at higher rates than structured interviews (Bagby & Farvolden, 2004), one should not conclude that 40% or 50% of the sample would or should be diagnosed with OCPD. Nonetheless, these results do suggest that the prescreening was successful in obtaining an adequate range of OCPD symptomatology as defined by these self-report measures.

Descriptive Statistics

Table 1 presents additional descriptive statistics for the eight OCPD scales. The internal consistency values of these scales ranged from .44 to .90. Because the scales varied tremendously in length, we also calculated the average corrected item-total correlations as a second indicator of internal consistency. These values were small to medium (e.g., Cohen, 1992), suggesting that the OCPD scales are quite heterogeneous in content, assessing a collection of disparate traits rather than a single, unidimensional construct.

Table 1 also presents the skewness and kurtosis of the distribution of scores for these scales. The PDQ–4 and the WISPI evidenced significant positive skew, indicating that the right half of their distributions were longer than would be expected in a normal distribution. Additionally, the SNAP, MCMI–III, and the two MMPI–2 scales exhibited negative kurtosis values, indicating these distributions were significantly platykurtic (i.e.,

TABLE 1.—Descriptive statistics for OCPD scales.

OCPD Scale	Items	<i>M</i>	<i>SD</i>	α	Avg. Corr. Item Total	Skewness Ratio	Kurtosis Ratio
MCMI–III	17	9.8	3.5	.73	.31	–1.45	–3.47
MMPI–2 (M)	13	7.2	2.4	.55	.20	–1.37	–2.56
MMPI–2 (S)	20	10.8	4.0	.75	.31	–1.77	–3.08
OMNI	18	64.3	11.7	.77	.35	0.76	0.08
PDQ–4	8	3.2	1.6	.44	.19	2.09	–1.29
SCID–II–PQ	9	4.0	1.9	.52	.23	1.63	–1.65
SNAP	23	10.3	3.7	.67	.23	1.97	–2.10
WISPI–IV	18	80.4	25.1	.90	.55	2.52	0.21

Note. OCPD = obsessive–compulsive personality disorder; α = Cronbach’s alpha; Avg. Corr. Item Total = the averaged correlation of each item with the sum of all other items, excluding itself, on a scale; MCMI–III = Millon Clinical Multiaxial Inventory–III; MMPI–2 (M) = Minnesota Multiphasic Personality Inventory–2 OCPD scale from Morey, Waugh, and Blashfield (1985); MMPI–2 (S) = MMPI–2 OCPD scale from Somwaru and Ben-Porath (1995); OMNI = OMNI Personality Inventory; PDQ–4 = Personality Diagnostic Questionnaire–IV; SCID–II–PQ = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. Axis II Personality Questionnaire; SNAP = Schedule of Nonadaptive and Adaptive Personality; WISPI–IV = Wisconsin Personality Disorders Inventory–IV.

Downloaded By: [University of Kentucky] At: 19:22 18 May 2010

TABLE 2.—Intercorrelations of obsessive-compulsive personality disorder (OCPD) scales.

OCPD Scale	MCMI-III	MMPI-2 (M)	MMPI-2 (S)	OMNI	PDQ-4	SCID-II-PQ	SNAP
MMPI-2 (M)	-.05						
MMPI-2 (S)	-.12	.89					
OMNI	.07	.53	.54				
PDQ-4	.09	.46	.49	.56			
SCID-II-PQ	.13	.50	.50	.71	.61		
SNAP	.26	.43	.46	.66	.60	.67	
WISPI-IV	.12	.41	.40	.64	.48	.60	.61

Note. *N* = 536. Values in bold are significant at *p* < .01, two-tailed. MCMI-III = Millon Clinical Multiaxial Inventory-III; MMPI-2 (M) = Minnesota Multiphasic Personality Inventory-2 OCPD scale from Morey, Waugh, and Blashfield (1985); MMPI-2 (S) = MMPI-2 OCPD scale from Somwaru and Ben-Porath (1995); PDQ-4 = Personality Diagnostic Questionnaire-IV; SCID-II-PQ = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. Axis II Personality Questionnaire; SNAP = Schedule of Nonadaptive and Adaptive Personality; WISPI-IV = Wisconsin Personality Disorders Inventory-IV.

flatter, such that the “peak” of the distribution is wider and the tails thinner than a normal distribution).

Convergent and Discriminant Validity

Table 2 provides the correlations among the eight OCPD scales. The median value was .49, suggesting significant convergence, albeit not as strong as one might prefer among measures purportedly assessing the same construct. It appeared that consistent with the findings of Widiger and Boyd (2009), the MCMI-III stood apart from the other measures. However, there were other weak findings as well, such as the convergence of the MMPI-2 scales with the WISPI-IV.

Table 3 presents the discriminant validity correlations, which we calculated by correlating each OCPD scale with the PDQ-4 scale for each of the other nine *DSM-IV-TR* personality disorders. Cronbach’s alpha values for the nine other PDQ-4 scales ranged from a low of .50 (schizoid) to a high of .69 (avoidant), with a median of .58. The patterns of the discriminant correlations are quite similar across measures, with the OCPD scales most differentiated from antisocial PD and moderately correlated with each of the other PDs. The MCMI-III was again a clear exception, as it correlated negatively with every other PD and had a mean discriminant correlation of -.23. In contrast, the other OCPD scales all obtained mean discriminant correlations that were significantly positive. The MMPI-2 scales obtained the worst discriminant validity, with the Somwaru and Ben-Porath scale correlating as high as .54 with the PDQ-4 avoidant

PD scale (a value higher than its correlation with the PDQ-4 OCPD scale). The remaining OCPD scales did appear to evidence sufficient discriminant validity, with mean correlations at or below .30.

Relations to the FFM

Table 4 presents the correlations of each OCPD scale with the domains and facets of the NEO PI-R. Because this table contains such a large number of correlations (i.e., 280), we utilized a Bonferroni correction to minimize the chance of Type I error. A Bonferroni correction for this number of correlations (i.e., .05/280) is .00018, thus we set *p* < .0002 (two-tailed). The results down each column of Table 4 represent the unique FFM profile of each OCPD scale. When looking across a row, one can compare the eight OCPD scales with respect to a particular domain or facet of the FFM.

It is clear from these correlations that the measures converged in terms of their relationships with certain FFM domains and facets. For example, nearly all the measures obtained strong positive relationships with the domain and facets of neuroticism, suggesting that a tendency toward negative affect is a core part of the conceptualization of OCPD offered by these instruments. Another commonality among many of the measures was a positive relationship with conscientiousness, as five of the measures achieved a significant correlation with this domain. In addition, the MCMI-III correlated significantly with all six facets; whereas the SNAP correlated with five; and the OMNI,

TABLE 3.—Discriminant correlations of obsessive-compulsive personality disorder (OCPD) scales.

PDQ-4 Scale	OCPD Scale							
	MCMI-III	MMPI-2 (M)	MMPI-2 (S)	OMNI	PDQ-4	SCID-II-PQ	SNAP	WISPI-IV
Paranoid	-.19	.40	.45	.36	.34	.32	.28	.27
Schizoid	-.09	.25	.24	.23	.24	.18	.23	.28
Schizotypal	-.09	.33	.38	.25	.32	.28	.27	.28
Antisocial	-.54	.09	.15	.04	.12	.00	.17	.05
Borderline	-.37	.42	.47	.32	.33	.29	.33	.27
Histrionic	-.26	.30	.36	.21	.31	.26	.24	.16
Narcissistic	-.16	.31	.35	.36	.32	.33	-.04	.36
Avoidant	-.10	.47	.54	.36	.33	.33	.27	.29
Dependent	-.26	.46	.51	.30	.39	.30	.24	.32
<i>M</i>	-.23	.34	.38	.27	.30	.25	.22	.25

Notes. *N* = 536. Values in bold are significant at *p* < .01, two-tailed. PDQ-4 = Personality Diagnostic Questionnaire-IV; MCMI-III = Millon Clinical Multiaxial Inventory-III; MMPI-2 (M) = Minnesota Multiphasic Personality Inventory-2 OCPD scale from Morey, Waugh, and Blashfield (1985); MMPI-2 (S) = MMPI-2 OCPD scale from Somwaru and Ben-Porath (1995); OMNI = OMNI Personality Inventory; SCID-II-PQ = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. Axis II Personality Questionnaire; SNAP = Schedule of Nonadaptive and Adaptive Personality; WISPI-IV = Wisconsin Personality Disorders Inventory-IV.

TABLE 4.—Self-report NEO PI-R correlations with OCPD scales.

	OCPD Scale							
	MCMI-III	MMPI-2 (M)	MMPI-2 (S)	OMNI	PDQ-4	SCID-II-PQ	SNAP	WISPI-IV
Neuroticism	-.31	.57	.65	.38	.31	.33	.28	.27
Extraversion	-.01	-.16	-.16	-.15	-.04	-.07	-.12	-.18
Openness	-.09	-.01	.00	-.22	.01	-.14	-.09	-.14
Agreeableness	.31	-.06	-.07	-.26	-.02	-.12	-.15	-.16
Conscientiousness	.71	-.06	-.11	.18	.11	.21	.31	.17
(n1) Anxiousness	-.06	.51	.58	.32	.29	.33	.28	.23
(n2) Angry hostility	-.32	.34	.35	.42	.25	.32	.31	.25
(n3) Depressiveness	-.26	.52	.59	.28	.23	.25	.22	.24
(n4) Self-consciousness	-.16	.49	.56	.31	.26	.26	.23	.24
(n5) Impulsiveness	-.31	.21	.28	.12	.12	.12	.05	.02
(n6) Vulnerability	-.30	.40	.46	.23	.17	.17	.11	.19
(e1) Warmth	.12	-.08	-.08	-.18	-.04	-.09	-.12	-.17
(e2) Gregariousness	-.12	-.13	-.12	-.18	-.09	-.12	-.21	-.22
(e3) Assertiveness	.07	-.17	-.21	.04	.02	.08	.13	.03
(e4) Activity	.05	-.02	-.02	.10	.11	.15	.16	.08
(e5) Excitement seeking	-.23	-.07	-.06	-.13	-.07	-.13	-.14	-.16
(e6) Positive emotions	.11	-.14	-.14	-.19	-.04	-.11	-.16	-.21
(o1) Fantasy	-.22	.06	.08	-.11	.01	-.10	-.10	-.14
(o2) Aesthetics	.04	.05	.06	-.12	.04	-.06	-.02	-.02
(o3) Feelings	.06	.13	.18	.10	.20	.18	.18	.01
(o4) Actions	-.19	-.19	-.18	-.33	-.14	-.28	-.24	-.20
(o5) Ideas	.03	-.02	-.06	-.11	.03	-.03	.00	.00
(o6) Values	-.08	-.06	-.07	-.26	-.11	-.20	-.16	-.28
(a1) Trust	.19	-.19	-.22	-.26	-.07	-.14	-.18	-.14
(a2) Straightforwardness	.30	-.07	-.07	-.11	.02	-.03	-.03	-.08
(a3) Altruism	.30	-.09	-.08	-.16	-.01	-.06	-.06	-.14
(a4) Compliance	.27	-.09	-.07	-.34	-.12	-.24	-.19	-.15
(a5) Modesty	.08	.08	.10	-.10	-.02	-.04	-.15	-.14
(a6) Tendermindedness	.16	.10	.08	-.08	.10	.04	.03	-.02
(c1) Competence	.51	-.10	-.16	.09	.09	.13	.23	.05
(c2) Order	.46	.04	-.02	.22	.08	.22	.22	.17
(c3) Dutifulness	.52	-.04	-.05	.17	.12	.23	.30	.16
(c4) Achievement striving	.49	-.07	-.10	.18	.10	.18	.32	.12
(c5) Self-discipline	.57	-.21	-.24	.02	-.02	.05	.14	.02
(c6) Deliberation	.61	.04	-.01	.11	.11	.15	.22	.20

Note. *N* = 536; All correlations in bold are significant at *p* < .0002 (two-tailed). NEO PI-R = Revised NEO Personality Inventory; OCPD = obsessive-compulsive personality disorder; MCMI-III = Millon Clinical Multiaxial Inventory-III; MMPI-2 (M) = Minnesota Multiphasic Personality Inventory-2 OCPD scale from Morey, Waugh, and Blashfield (1985); MMPI-2 (S) = MMPI-2 OCPD scale from Somwaru and Ben-Porath (1995); OMNI = OMNI Personality Inventory; PDQ-4 = Personality Diagnostic Questionnaire-IV; SCID-II-PQ = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. Axis II Personality Questionnaire; SNAP = Schedule of Nonadaptive and Adaptive Personality; WISPI-IV = Wisconsin Personality Disorders Inventory-IV.

SCID-II PQ, and WISPI-IV each correlated with three facets of conscientiousness.

However, it was also clear that the OCPD instruments were not solely confined to conscientiousness and neuroticism. Seven of the eight instruments correlated negatively with openness to actions, suggesting that closedness to doing or trying new things is a fundamental part of each instrument's assessment of OCPD. Additionally five correlated negatively with the agreeableness facet of trust and three with the extraversion facets of gregariousness and positive emotions.

Nonetheless, there were also notable differences among the measures in their relationships with the NEO PI-R. For example, the disaggregation of the OCPD scales in terms of the FFM helps to understand the relatively weak convergent validity of the MCMI-III with the other six OCPD scales. The MCMI-III obtained, by far, the highest correlation with conscientiousness (*r* = .71). The MCMI-III OCPD scale also correlated negatively with neuroticism and positively with agreeableness, whereas all of the others correlated positively with neuroticism and two correlated negatively with agreeableness.

The MCMI-III, however, did not provide the only disparate description of OCPD with respect to FFM personality traits. Table 4 indicates that the MMPI-2 assessments of OCPD were confined largely to facets of neuroticism. These scales obtained the highest correlation with neuroticism and failed to correlate significantly with conscientiousness (even correlating negatively with the facet of self-discipline). Thus, it might not be surprising that the MCMI-III and the MMPI-2 Somwaru and Ben-Porath (1995) scales actually correlated negatively. The FFM profile obtained by the PDQ-4 was similar to that of the MMPI-2 scales in that it correlated primarily with neuroticism, although not nearly as strongly. However, it was not significantly correlated with any other FFM domain. Thus, with respect to the FFM traits, it appears as though the PDQ-4, like the two MMPI-2 scales, conceptualizes OCPD primarily in terms of neuroticism.

Coverage of the DSM-IV-TR OCPD Construct

We also sought to identify how well each instrument covered the *DSM-IV-TR* OCPD construct using the clinicians' ratings

of each item from all measures in terms of the eight diagnostic criteria for OCPD within *DSM-IV-TR* (American Psychiatric Association, 2000). We then averaged these ratings across the clinicians such that every item had a mean rating for each diagnostic criterion. We then examined these mean item ratings for each item within each instrument to determine how strongly the instrument represented a given diagnostic criterion.¹ Those items that received a mean rating of at least 2.5 were considered as indicative, as this was the minimal score necessary to indicate that an item was at least “moderately” to “mostly” representative of a respective criterion. Aggregated interrater reliability was calculated using intraclass correlation coefficients for the composite of six clinicians, with items treated as cases and raters as variables. The values ranged from a low of .54 (criterion 8, “rigidity and stubbornness”) to a high of .85 (criterion 5, “unable to discard worthless objects”), with a median of .70.

It is notable that only the PDQ-4, SCID-II-PQ, and OMNI scales include at least one item for each of the eight diagnostic criteria, consistent with their having been constructed explicitly to represent the diagnostic criterion sets. The WISPI and the SNAP both included an item for six criteria but failed to include any items assessing Criteria 7 (“miserly spending style”) and 8 (“rigidity and stubbornness”). The MCMI-III included items assessing five of the diagnostic criteria but did not include items for Criterion 2 (“perfectionism”), 5 (i.e., “unable to discard worthless objects”), or 6 (“reluctant to delegate”).

The MMPI-2 scales appear to be somewhat distinct, as they did not include items representing five of the eight diagnostic criteria including 1 (“preoccupied with details”), 2 (“perfectionism”), 3 (“workaholic”), 7 (“miserly spending style”), and 8 (“rigidity and stubbornness”). In fact, fully 18 of the items from the MMPI-2 scales did not represent any OCPD diagnostic criteria. In examining these items more closely, they appear to be more representative of Axis I anxiety disorders than of OCPD (e.g., Item 166 “worry about sex”) or a more general ruminative anxiousness (e.g., Item 328 “unimportant thoughts run through my mind for days”).² The inclusion of items that did not assess any criteria, though, was not unique to the MMPI-2. In fact, 10 of the 17 items from the MCMI-III and 10 of the 23 items from the SNAP were not related to a single criterion. However, in the case of the SNAP, seven of these 10 items were actually written to assess *DSM-III-R* criteria that were not retained (“indecisiveness” and “restricted affection”) or were significantly altered (“not generous with time, money or gifts”) for the *DSM-IV-TR*.

DISCUSSION

The results from this study indicate that although eight self-report scales for the assessment of OCPD evidenced moderate convergence (median [*Mdn*] = .49) with one another and reasonable divergence from other PD constructs (*Mdn* = .26). This convergent value was substantially higher than the median value reported by Widiger and Boyd (2009) but was still perhaps lower than might be expected for measures of the same construct.³

¹These mean ratings for all of the items are available by contacting D. B. Samuel.

²In light of copyright issues, all items presented within the text are paraphrased using content from the item rather than producing it verbatim.

³We also note that the relatively low internal consistency of these scales might cap their relationship with one another. However, the instrument with

Considering the fluctuations and alterations that have characterized the history of the disorder (Costa et al., 2005), it might not be surprising that extant measures would vary in terms of their operationalizations. A closer examination of the results suggests that a great deal of the variability among measures is attributable to somewhat discrepant assessments offered by the scales from the MMPI-2 and MCMI-III. Although there are important differences among the other five scales, their convergence was more robust, with a median correlation of .61 among them.

Beyond their convergence, important differences were also noted among the measures with respect to their relationships with the traits of the FFM and their representation of the *DSM-IV-TR* (American Psychiatric Association, 2000) diagnostic criteria. Although there was a great deal of consistency in how most of the scales related to the FFM (i.e., high conscientiousness, high neuroticism, low openness to actions, and, to a lesser extent, introversion), the magnitude of these relationships varied. Additionally, in the cases of the MMPI-2 and MCMI-III scales, the differences in their relationships with the FFM variables can help to explain their somewhat lower convergence with other measures.

For example, both the Morey et al. (1985) *DSM-III* and the Somwaru and Ben-Porath (1995) *DSM-IV* MMPI-2 assessments of OCPD were confined largely to the domain and facets of neuroticism, with no representation of maladaptively high conscientiousness or other FFM domains (perhaps contributing to its relatively worse discriminant validity). The MMPI-2 scales' strong relationships with neuroticism are not necessarily problematic. In fact, inability to relax (American Psychiatric Association, 1968) and chronic tension (American Psychiatric Association, 1952) were included within the earliest formulations of this PD but disappeared with *DSM-III* (American Psychiatric Association, 1980). Clinicians also consider traits concerning anxiousness, tension, and self-consciousness to be characteristic of prototypic cases of OCPD (Samuel & Widiger, 2004). Nonetheless, the fact that, according to the clinicians' ratings, the two MMPI scales fail to include any items assessing five of the *DSM-IV-TR* diagnostic criteria and actually contain several items unrelated to any OCPD diagnostic criteria does raise concerns about the MMPI-2 scales that warrant future research.

These findings for the MMPI-2 are perhaps explained by the unique method with which its OCPD scales were constructed. Whereas the other measures are comprised of items written to provide an adequate to optimal assessment of OCPD, the MMPI-2 scales were confined to items that were already included within this preexisting self-report inventory. Thus, to the extent that the item pools of the MMPI or MMPI-2 lack an adequate representation of OCPD pathology, they would be unable to represent these aspects in the ensuing scale.

In fact, previous research has suggested that the MMPI and MMPI-2 do not contain items assessing conscientiousness. A principal components analysis of the MMPI item pool indicated that only neuroticism was well represented from the FFM (Costa, Zonderman, McCrae, & Williams, 1985),

the lowest internal consistency (the PDQ-4) did relate well with most of the other instruments. The PDQ-4 is one of the instruments that assesses all of the *DSM-IV-TR* diagnostic criteria. We suspect its low internal consistency is due in part to the heterogeneity of the diagnostic criterion set and the relatively fewer number of items.

with the “absence of any items or scales corresponding to . . . Conscientiousness” (p. 932). This finding was replicated by Costa, Busch, Zonderman, and McCrae (1986) and by Trull, Useda, Costa, and McCrae (1995) with the MMPI-2. Thus, although Morey et al. (1985) and Somwaru and Ben-Porath (1995) may have indeed selected the best available OCPD items from the MMPI and MMPI-2, their selections were limited by the instruments’ existing content. As a result, the MMPI-2 OCPD scales do not appear to contain FFM conscientiousness or some specific aspects of the OCPD construct (e.g., workaholism, perfectionism, and preoccupation with details).

Aspects of conscientiousness are evident among most of the American Psychiatric Association (2000) diagnostic criteria, including preoccupation with details, rules, lists, and order (i.e., the FFM facet of order); perfectionism (i.e., an excessive emphasis on competence); devotion to work and productivity (i.e., excessive achievement striving); and even a criterion that refers explicitly to conscientiousness. In fact, a preoccupation with orderliness and perfectionism are two of the three defining features of *DSM-IV-TR* OCPD (American Psychiatric Association, 2000, p. 725). Consistent with this expectation, the SNAP, SCID-II-PQ, OMNI, MCMI-III, and WISPI-IV scales all obtained significant correlations with conscientiousness.

If one considers OCPD to be simply a disorder of excessive conscientiousness, the MCMI-III might be thought of as providing one of the best assessments, as it correlated substantially with this domain ($r = .71$). However, potentially problematic to the validity of the MCMI-III is its very low convergent correlations with other OCPD scales. It appears, though, that this low convergence is not due to its heavy emphasis on conscientiousness but rather because the MCMI-III obtains correlations with neuroticism and agreeableness that are opposite in direction from the other measures. Whereas the other measures consider persons with OCPD to be high in neuroticism, the MCMI-III conceptualizes OCPD as low in neuroticism and was designed not to assess state anxiety (Millon et al., 1996). In this sense, the MCMI-III conceptualization is actually more consistent with the existing criterion set that excludes symptoms of anxiousness or neuroticism (Widiger, Trull, Clarkin, Sanderson, & Costa, 2002). This could reflect the fact that the MCMI-III was designed to distinguish the PDs from one another within a clinical sample (most of the other personality disorders are characterized by high neuroticism), whereas the other measures were perhaps more designed to distinguish the presence versus absence of each PD. As such, the findings for the MCMI-III might indicate that OCPD is lower in neuroticism and agreeableness relative to the other PDs.

The clinicians’ ratings of the individual items for each criterion are again useful complements to the FFM ratings in helping to understand the unique nature of the MCMI-III scale. Although there is no infallible indicator of OCPD, the diagnostic criteria do provide a common, if imperfect, definition of the construct.⁴ In addition, the instruments are typically used to provide assessments of *DSM-IV* OCPD and in most cases, were explicitly constructed to do so. Using this metric, the MCMI-III includes items that were rated as assessing Criterion 1 (“preoc-

cupied with details, lists, orders”), Criterion 3 (“workaholism”), and Criterion 4 (“overconscientious about morals”). All of these appear to be heavily tied to the trait of conscientiousness, and one could perhaps argue that these particular criteria have some potential adaptive consequences. Indeed, a positive response to MCMI-III Item 137 (“I finish my work before taking time for leisure”), although clearly in the realm of workaholism, might prove adaptive within an occupational context. These findings may also help to explain previous research that suggested that the MCMI-III OCPD scale is associated with successful functioning rather than impairment (Craig, 1999).

The very strong relationship between the MCMI-III and conscientiousness is certainly consistent with previous research, yet it is important to note that this relationship is not unique to the MCMI-III. Saulsman and Page (2004, 2005) conducted a meta-analysis and reported that the mean weighted effect size for all OCPD measures with conscientiousness was .23. However, Saulsman and Page further noted that the instrument significantly moderated the relationship. When the effect size was recalculated excluding MCMI-III studies, the relationship dropped to .03, which led them to suggest that the relationship between OCPD and conscientiousness could reflect an idiosyncrasy of the MCMI-III.

This interpretation by Saulsman and Page (2004) is understandable given the very weak convergence between the MCMI-III and other measures of OCPD found currently and in previous studies (Widiger & Boyd, 2009). However, we note that none of the studies considered by Saulsman and Page (2004) included the SNAP, SCID-II-PQ, WISPI-IV, or OMNI, all of which correlated significantly with conscientiousness in this study. If these measures had been included in prior FFM PD research, the results of the Saulsman and Page meta-analysis might have been different.

Additionally, of the 24 studies compiled by Widiger and Boyd (2009), only two included the SNAP, only one included the WISPI-IV, and none administered the OMNI (Widiger & Boyd did not include the SCID-II-PQ in their review). The findings of this study suggest that it is precisely these instruments that correlate most highly with conscientiousness. As noted earlier, two of the three *DSM-IV-TR* defining features of OCPD concern facets of conscientiousness (i.e., orderliness and perfectionism). Thus, it appears that perhaps ironically, the instruments that might best assess conscientiousness within OCPD are being used the least frequently. Minimally, the findings suggest that the SNAP, WISPI-IV, SCID-II-PQ, and OMNI should be more heavily considered as measures of OCPD in future research.

Nonetheless, even the relationships for these measures with conscientiousness (ranging from .17-.31) are perhaps lower than one might expect given the theoretical connection between OCPD and conscientiousness (e.g., Widiger et al., 2002). The OCPD measures can be said to concern a maladaptive conscientiousness, whereas the NEO PI-R is confined largely to an adaptive conscientiousness (although it does include one item concerning workaholism). Haigler and Widiger (2001) demonstrated that the correlation of NEO PI-R conscientiousness with OCPD increases substantially when its items are revised to assess maladaptive variants of conscientiousness.

Limitations and Future Directions

There is reason to believe that the maladaptive traits of OCPD may be studied effectively within an undergraduate population.

⁴We also note that any potential departure from the *DSM-IV-TR* definition does not imply invalidity. In fact, such departures might also reflect choices on the part of an instrument’s author to deviate from those parts of the definition that he/she does not agree with theoretically.

Traits such as workaholism and perfectionism may not be terribly uncommon within a collegiate setting. Grant et al. (2004) found that rates of OCPD were significantly higher for persons with at least some college education. Torgersen, Kringlen, and Cramer (2001) reported that within a large community sample, OCPD was the only PD that obtained a significant, positive relationship with education level. Blanco et al. (2008) reported that OCPD was the single most prevalent PD within the college population (8%). In addition, over 1,000 participants were screened to obtain persons with clinically significant OCPD symptomatology. Nevertheless, the relevance of the OCPD scales is typically understood in reference to psychiatric populations. This is particularly true for the MCMI-III, as its authors do not recommend using the instrument within nonclinical samples; they suggest it may measure only qualitative aspects of the pathology rather than their severity (Millon et al., 1997). Thus, it would be of interest to determine whether comparable findings would be obtained within outpatient clinical samples where persons diagnosed with OCPD are being treated.

The instruments compared in this study were exclusively self-report. Semistructured interviews are often the preferred method for the assessment of PDs (McDermutt & Zimmerman, 2005; Rogers, 2001), and the lack of an interview in this study perhaps then limits the conclusions that can be drawn regarding validity. For instance, some might contend that self-report inventory scales cannot differentiate adaptive from maladaptive versions of personality traits. Future research that compares these self-report instruments to an interview assessment of OCPD would be helpful in extending the findings. On the other hand, it is also possible that any assessment instrument, even a semistructured interview, could be prone to the same variations in conceptualization and assessment that were obtained for the self-report inventories. As such, it might be of interest for future studies to consider comparing alternative semistructured interview assessments of OCPD with respect to their representation of traits of neuroticism, conscientiousness, and extraversion.

Although there is no gold standard by which to judge the validity of self-report measures of OCPD, it might be useful for future researchers to compare the eight scales to additional external validators. The NEO PI-R does include two scales that relate closely to two of the three defining features of *DSM-IV-TR* OCPD (i.e., orderliness and perfectionism), but the NEO PI-R assertiveness facet would not serve as a strong marker for the third defining feature, mental and interpersonal control.

Finally, in this study, we utilized specific scales removed from larger inventories. We are unaware of any evidence to suggest responses are strongly context dependent (i.e., the response to a given item are affected by which item comes before and after it), and in fact, computer adaptive tests such as the Graduate Record Examination (Educational Testing Services, 2010) regularly administer items in different orders depending on an individual's ability estimate. In addition, the PDQ-4 items are organized with respect to each personality disorder scale. Nonetheless, this is ultimately an empirical question, and it is possible that these items may perform differently when they are removed from their standard ordering. Additionally, although the responses were filtered for incomplete protocols, we did not remove any participants based on standardized validity scales.

ACKNOWLEDGMENTS

This research was made possible, in part, by a fellowship (F31MH074245-02) awarded to D. B. Samuel from the National

Institute of Mental Health. Writing of this article was supported by the Office of Academic Affiliations, Advanced Fellowship Program in Mental Illness Research and Treatment, Department of Veterans Affairs.

REFERENCES

- American Psychiatric Association. (1952). *Diagnostic and statistical manual of mental disorders* (1st ed.). Washington, DC: Author.
- American Psychiatric Association. (1968). *Diagnostic and statistical manual of mental disorders* (2nd ed.). Washington, DC: Author.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Bagby, M. R., & Farvolden, P. (2004). The Personality Diagnostic Questionnaire-4 (PDQ-4). In D. Segal & M. Hilsenroth (Eds.), *Comprehensive handbook of psychological assessment: Vol. 2. Personality assessment* (pp. 122-133). Hoboken, NJ: Wiley.
- Blanco, C., Okuda, M., Wright, C., Hasin, D. S., Grant, B. F., Liu, S.-M., & Olfon, M. (2008). Mental health of college students and their non-college-attending peers. *Archives of General Psychiatry*, 65, 1429-1437.
- Butcher, J. N., Dahlstrom, W. G., Graham, J. R., Tellegen, A., & Kaemmer, B. (1989). *MMPI-2: Minnesota Multiphasic Personality Inventory-2: Manual for administration and scoring*. Minneapolis: University of Minnesota Press.
- Camara, W. J., Nathan, J. S., & Fuente, A. E. (2000). Psychological test usage: Implications in professional psychology. *Professional Psychology: Research and Practice*, 31, 141-154.
- Clark, L. A. (1993). *Schedule for Nonadaptive and Adaptive Personality (SNAP)*. Minneapolis: University of Minnesota Press.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.
- Costa, P. T., Jr., Busch, C. M., Zonderman, A. B., & McCrae, R. R. (1986). Correlations of MMPI factor scales with measures of the five-factor model of personality. *Journal of Personality Assessment*, 50, 640-650.
- Costa, P. T., Jr., & McCrae, R. R. (1985). *NEO Personality Inventory (NEO PI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., Jr., & McCrae, R. R. (1990). Personality disorders and the five-factor model of personality. *Journal of Personality Disorders*, 4, 362-371.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P., Samuels, J., Bagby, M., Daffin, L., & Norton, H. (2005). Obsessive-compulsive personality disorder: A review. In M. Maj, H. S. Akiskal, J. E. Mezzich, & A. Okasha (Eds.) *Personality Disorders* (pp. 405-439). New York, NY: Wiley.
- Costa, P. T., Jr., Zonderman, A. B., McCrae, R. R., & Williams, R. B., Jr. (1985). Content and comprehensiveness in the MMPI: An item factor analysis in a normal adult sample. *Journal of Personality and Social Psychology*, 48, 925-933.
- Craig, R. J. (1999). Overview and current status of the Millon Clinical Multiaxial Inventory. *Journal of Personality Assessment*, 72, 390-406.
- Educational Testing Services. (2010). *Graduate Record Examination*. Princeton, NJ: Author.
- First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). *Structured Clinical Interview for DSM-IV Axis-II Personality Disorders Self-Report*. Washington, DC: American Psychiatric Association.
- Freud, S. (1953). Character and anal eroticism. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 9, pp. 169-175). London, England: Hogarth. (Original work published 1908)
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26-34.
- Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., Chou, S. P., Ruan, W. J., & Pickering, R. P. (2004). Prevalence, correlates, and disability of personality disorders in the United States: Results from the National Epidemiologic

- Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, 65, 948–958.
- Haigler, E. D., & Widiger, T. A. (2001). Experimental manipulation of NEO PI-R items. *Journal of Personality Assessment*, 77, 339–358.
- Hicklin, J., & Widiger, T. A. (2000). Convergent validity of alternative MMPI-2 personality disorder measures. *Journal of Personality Assessment*, 75, 502–518.
- Hicklin, J., & Widiger, T. A. (2005). Similarities and differences among antisocial and psychopathic self-report inventories from the perspective of general personality functioning. *European Journal of Personality*, 19, 325–342.
- Hyer, S. E. (1994). *Personality Diagnostic Questionnaire-4 (PDQ-4)*. Unpublished manuscript. New York, NY: New York State Psychiatric Institute.
- Klein, M. H., & Benjamin, L. S. (1996). *Wisconsin Personality Disorders Inventory-IV*. Unpublished manuscript.
- Loranger, A. W. (2001). *OMNI Personality inventories: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- McDermutt, W., & Zimmerman, M. (2005). Assessment instruments and standardized evaluation. In D. Bender, J. Oldham, & A. Skodol (Eds.), *The American Psychiatric Publishing textbook of personality disorders* (pp. 89–101). Washington, DC: American Psychiatric Publishing.
- Miller, J. D. & Campbell, W. K. (2008). Comparing clinical and social-personality conceptualizations of narcissism. *Journal of Personality*, 76, 449–476.
- Millon, T., Davis, R. D., Millon, C. M., Wenger, A. W., Van Zuielen, M. H., Fuchs, M., & Millon, R. B. (1996). *Disorders of personality: DSM-IV and beyond*. New York, NY: Wiley.
- Millon, T., Millon, C., & Davis, R. (1997). *Millon Clinical Multiaxial Inventory: MCMI-III*. Upper Saddle River, NJ: Pearson Assessments.
- Morey, L. C., Waugh, M. H., & Blashfield, R. K. (1985). MMPI scales for DSM-III personality disorders: Their derivation and correlates. *Journal of Personality Assessment*, 49, 245–251.
- Ozer, D. J., & Reise, S. P. (1994). Personality assessment. *Annual Review of Psychology*, 45, 357–388.
- Pfohl, B., & Blum, N. (1995). Obsessive-compulsive personality disorder. In W. J. Livesley (Ed.), *The DSM-IV personality disorders* (pp. 261–276). New York, NY: Guilford.
- Rogers, R. (2001). *Handbook of diagnostic and structured interviewing*. New York, NY: Guilford.
- Samuel, D. B., & Widiger, T. A. (2004). Clinicians' descriptions of prototypic personality disorders. *Journal of Personality Disorders*, 18, 286–308.
- Samuel, D. B., & Widiger, T. A. (2008). Convergence of narcissism measures from the perspective of general personality functioning. *Assessment*, 15, 364–374.
- Saulsman, L. M., & Page, A. C. (2004). The five-factor model and personality disorder empirical literature: A meta-analytic review. *Clinical Psychology Review*, 23, 1055–1085.
- Saulsman, L. M., & Page, A. C. (2005). Corrigendum to "The five-factor model and personality disorder empirical literature: A meta-analytic review." *Clinical Psychology Review*, 25, 383–394.
- Somwaru, D. P. & Ben-Porath, Y. S. (1995, March). *Development and reliability of MMPI-2 based personality disorder scales*. Paper presented at the 30th Annual Workshop and Symposium on Recent Developments in Use of the MMPI-2 and MMPI-A. St. Petersburg Beach, FL.
- SPSS, inc. (2006). SPSS MR interview. Chicago, IL: Author.
- Torgersen, S. (2005). Epidemiology. In J. M. Oldham, A. E. Skodol, & D.S. Bender (Eds.), *Textbook of personality disorders* (pp. 129–141). Washington DC: American Psychiatric Publishing.
- Torgersen, S., Kinglen, E., & Cramer, V. (2001). The prevalence of personality disorders in a community sample. *Archives of General Psychiatry*, 58, 663–668.
- Trost, K. K., Ayearst, L. E., & Salekin, R. T. (2004). Where is the personality in personality disorder assessment? A comparison across four sets of personality disorder scales. *Multivariate Behavioral Research*, 39, 231–271.
- Trull, T. J., Useda, J. D., Costa, P. T., & McCrae, R. R. (1995). Comparison of the MMPI-2 personality psychopathology five (PSY-5), the NEO PI and the NEO PI-R. *Psychological Assessment*, 7, 508–516.
- Widiger, T. A., & Boyd, S. (2009). Assessing personality disorders. In J. N. Butcher (Ed.), *Oxford handbook of personality assessment* (3rd ed., pp. 336–363). New York, NY: Oxford University Press.
- Widiger, T. A., Frances, A., Spitzer, R. L., & Williams, J. B. W. (1988). The DSM-III-R personality disorders: An overview. *American Journal of Psychiatry*, 145, 786–795.
- Widiger, T. A., Trull, T. J., Clarkin, J. F., Sanderson, C. J., & Costa, P. T., Jr. (2002). A description of the DSM-IV personality disorders with the five-factor model of personality. In P. T. Costa Jr. & T. A. Widiger (Eds.), *Personality disorders and the five-factor model of personality* (2nd ed., pp. 89–99). Washington DC: American Psychological Association.
- Zarella, K. L., Schuerger, J. M., & Ritz, G. H. (1990). Estimation of MCMI DSM-III Axis II constructs from MMPI scales and subscales. *Journal of Personality Assessment*, 55, 195–201.
- Zuroff, D. C. (1994). Depressive personality styles and the Five-factor model of personality. *Journal of Personality Assessment*, 63, 453–472.